ITRONIX®	TECHNICAL NOTE	Number	560
	DATE: 22-Sep-00	Issue	1

TITLE:	**FS – Comms and Charging Rack Connectivity**
ABSTRACT:	Recommendations on how to connect / interconnect the FS/CCR and PC

Introduction

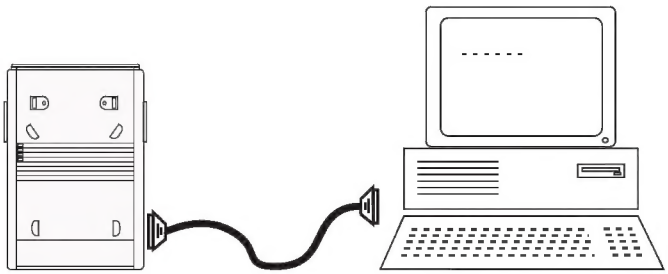
The FS Series *'Communications and Charging Rack'* (CCR) needs some special considerations when arranging the set up and wiring configurations. The following is an overview of recommendations for their use.

General Recommendations

Whatever the configuration, some standard recommendations apply, these include the following.

- The cable from the PC to the 1st rack should **only** contain 3 wires as follows:
  Tx → Rx
  RX → Tx
  Gnd → Gnd
- RTS & CTS Handshaking wires should not be used although RI, DSR DCD can be if required.
- All cables should be shielded and as short as possible (ideally less than 3 metres)
- The communications speed between the PC and CCR should not be greater than 19200 baud and this should be reduced for large quantities of racks if problems are experienced.
- Where racks are 'Daisy Chained' and additional cables are used, the total cable length from PC to the last rack **must not** exceed 15m to ensure correct performance.

Sample Configuration 1 – One CCR connected to a PC



In this example the cable should be a 3 wire cross as per the general recommendations above. Communications can be established at any standard speed up to and including 19200 baud.

Multiple CCRs – '*Daisy Chaining*'

The Husky CCR includes the facility to connect multiple units together using the 'Pass Through' connector on the left-hand side. This facilitates a chain allowing multiple FS series computers to communicate with a PC using only one PC communications port.

Note that only one FS computer can communicate at a time with the PC however programming techniques will allow the required FS unit to be 'polled' when required.

Daisy Chaining the CCR units presents some additional considerations in terms of cabling, communications speeds and power supply requirements.

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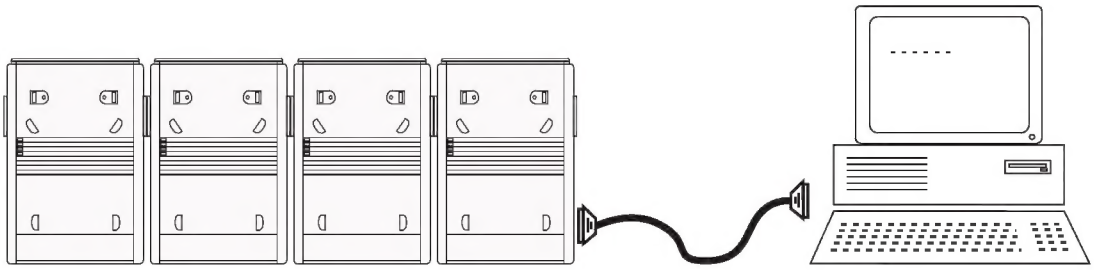
Considerations for '*Daisy Chaining*' of CCR units

Please note the following recommendations.

- The maximum recommended chain is 16 units in order to maintain reliable communications.
- Lower communications speeds may be required for large quantities of units, for 16 or more units a speed of 9600 baud should be used to maintain reliable data integrity.
- Each unit should have it's own power supply.

Sample Configuration 2 – Multiple CCRs connected to a PC



In this example, a quantity of CCR units are connected together allowing the data to pass through to each successive CCR. Note that the connector on the right hand side should be used for input from the PC or previous CCR. Additionally 'Rack Joining Kits' are available providing a securing bracket between each unit.

Sample Configuration 3 – Multiple groups of CCR units.

It is possible to connect 'groups' of CCRs where the chain cannot physically be placed in a continuous row.

In this example the inter-connecting cable between each group should have the wires connected straight through in a pin-pin configuration. Once again this cable **should not** have the handshaking lines connected (RTS & CTS). If required the RI, DSR and DCD lines can also be connected.

Important note: the total cable length from the PC to the last CCR unit should not exceed 15 metres. If you require further information please contact Itronix Technical Support or refer to the CCR Developers Guide available on request.

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